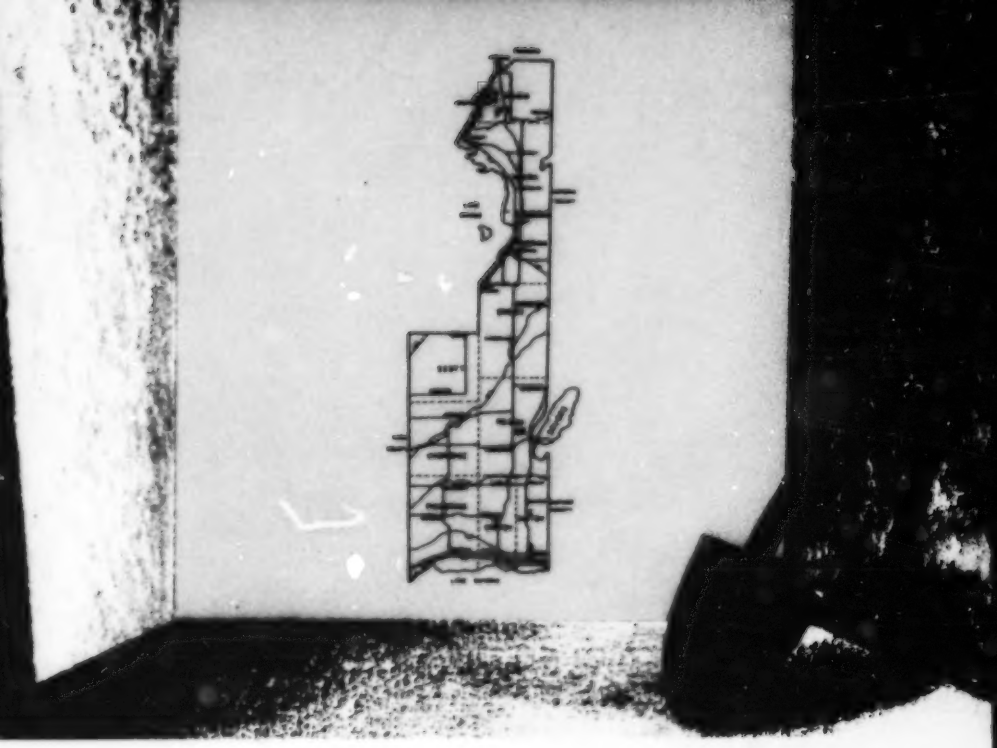
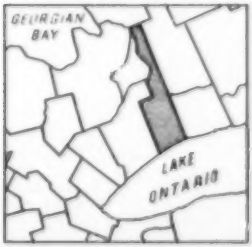


SOIL SURVEY OF FORMERLY ONTARIO COUNTY

NOW WESTERN PORTION OF REGION OF DURHAM

REPORT NO. 23 OF THE ONTARIO SOIL SURVEY



Prepared jointly by the Experimental Farm Service, Canada Department of Agriculture and the Ontario Agricultural College

Ontario
Ministry of Agriculture and Food
David Ramsay, Minister

Agriculture Canada
Research Branch
Direction générale de la recherche

SOIL SURVEY of ONTARIO COUNTY

by

A. B. OLDING
R. E. WICKLUND
Experimental Farms Service

and

N. R. RICHARDS
Ontario Agricultural College

GUELPH, ONTARIO

●

Reprinted March 1990

REPORT NO. 23 OF THE ONTARIO SOIL SURVEY

For other Counties and
Districts Survey Information,
Contact the
Consumer Information Centre,
Ontario Ministry of Agriculture and Food,
Main Floor,
801 Bay St.,
Toronto, Ontario
M7A 2B2

PREFACE

The soils of Ontario County were surveyed during the summers of 1949 and 1950.

Other Counties and Districts surveyed and maps published are as follows:

1.	*Norfolk*	*Map only*
2.	*Elgin*	*Map only*
3.	*Kent*	*Map only*
4.	*Haldimand*	*Map only*
5.	*Welland*	*Map only*
6.	*Middlesex*	*Map only*
7.	*Carleton*	*Map and Report*
8.	*Parts of Northwestern Ontario*	*Map and Report*
9.	*Durham*	*Map and Report*
10.	*Prince Edward*	*Map and Report*
11.	*Essex*	*Map and Report*
12.	*Grenville*	*Map and Report*
13.	*Huron*	*Map and Report*
14.	*Dundas*	*Map and Report*
15.	*Perth*	*Map and Report*
16.	*Bruce*	*Map and Report*
17.	*Grey*	*Map and Report*
18.	*Peel*	*Map and Report*
19.	*York*	*Map and Report*
20.	*Stormont*	*Map and Report*
21.	*New Liskeard—Englehart Area*	*Map and Report*
22.	*Lambton*	*Map and Report*

ACKNOWLEDGEMENTS

The Canada Department of Mines and Technical Surveys, Surveys and Mapping Branch, supplied the base maps. The published copy of the Soil Map was prepared for lithographing by the Cartographic Section of the Division of Field Husbandry, Soils and Agricultural Engineering, Central Experimental Farm, Ottawa.

Dr. P. C. Stobbe, Canada Department of Agriculture, reviewed the manuscript and assisted with classification and correlation problems in the field.

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FIG. 1: Outline Map of Ontario Showing the Location of Ontario County and Other Areas for which Soil Maps have been Published.

Soil Survey of Ontario County

by

A. B. OLDING, R. E. WICKLUND *and* N. R. RICHARDS

INTRODUCTION

The Soil Survey of Ontario County was conducted during the summers of 1949 and 1950 as a co-operative project between the Department of Soils, Ontario Agricultural College, Guelph, and the Division of Field Husbandry, Soils and Agricultural Engineering, Experimental Farms Service, Ottawa.

The results of the soil survey are presented in this report, and the soil map may be found in the pocket inside the back cover.

The report is divided into several parts, each of which deals with a certain aspect of the soils of the County. The first part gives general information about the County that is of interest to the reader. The factors that affect the formation of soils are described in Part II. Part III contains a description of each soil mapped and suggestions relating to the use and management of the soil. A brief history of agriculture and some facts about present land use are given in Part IV. Further discussion of land use management and crop adaptability ratings are also given in this part.

The map is on a scale of one inch to one mile, and on it are drawn the boundaries between individual kinds of soil. The kind of soil is identified on the map by use of colours, and symbols, the key for which appears at the bottom of the map. The key also gives some general information about each soil. In using the map, it should be understood that the scale of the map prohibits showing soil variations of very small acreages (i.e. less than twenty acres). However, the map when used in conjunction with the report can give information that will be of great value in predicting the productivity of the soil even in limited areas.

* Mr. D. D. Dolson and Mr. M. H. Miller assisted with the field work. Miss G. V. Palmer assisted with drawing maps, charts, etc.

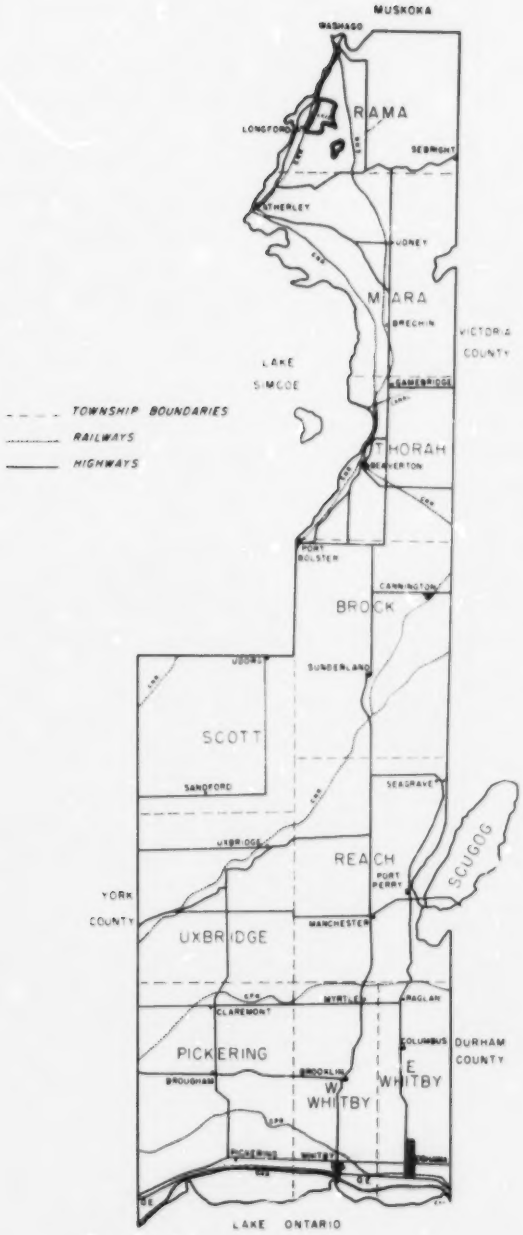


FIG. 2: Outline Map of Ontario County Showing Townships, and Principal Towns.

PART I

GENERAL DESCRIPTION OF THE AREA

Location and Area

Ontario County is situated on the north shore of Lake Ontario and extends north to the Muskoka District. It is bordered on the east by Durham and Victoria Counties. York County adjoins it on the west, as well as Lake Simcoe and Lake Couchiching.

The total land area of the County is approximately 853 square miles (545,920 acres). About 85 per cent (468,983 acres) of the total area is occupied farm land.

County Seat and Principal Towns

Whitby, situated near the shores of Lake Ontario, is the County town. In 1951 Whitby had a population of 7,267*. Here are located the County buildings, and the Ontario Ladies College.

The Site of the First Farm Improvement and Soil Conservation Day in Canada at Brooklin.

The city of Oshawa (41,545), 5 miles east of Whitby, has been appropriately called the "Manchester of Canada". Oshawa is the home of General Motors of Canada, as well as many other industries, where many persons from the surrounding country are employed. The City is also important in that it provides an agricultural market.

Uxbridge (1,785), is the agricultural centre of the County. The offices of the Agricultural Representative and Home Economist are located here. Other centres of importance are Port Perry (1,721) on Lake Scugog; Beaverton (1,048) on Lake Simcoe; and the village of Cannington (890). Ajax (4,168), on the outskirts of the village of Pickering, was built up during the war and is now an industrial centre. Brooklin, situated in the centre of a good farming district, has the distinction of having had the first Farm Improvement and Soil Conservation Day in Canada.

* Population figures are taken from the 1951 Census.

Population

The total population of Ontario County, according to the 1951 census, was 87,088. Of this number 57 per cent was urban, while 43 per cent was rural.

The population increased from about 30,000 in 1854 to 45,892 in 1871 and then remained fairly constant until 1921. Since that time it has increased to the present figure. These facts are indicated in the following table.

TABLE I

TREND OF POPULATION

Year	Population	Year	Population
1871	45,890	1921	46,494
1881	48,812	1931	59,667
1891	45,355	1941	65,718
1901	40,408	1951	87,088
1911	41,006		

A large proportion of the population of Ontario County is of British origin.

Transportation and Markets

Ontario County is served by a widespread network of railroads and roads. The Toronto-Montreal lines of the Canadian National Railways and the Canadian Pacific Railways pass through the County along the Lake Ontario shore. The Canadian Pacific line from Toronto to Ottawa traverses the County south of Lake Scugog. The main line of the Canadian National Railway from Toronto to Winnipeg follows the Lake Simcoe shore via Beaverton and Washago. Another Canadian National line runs from Toronto via Uxbridge, Blackwater, and Beaverton to Orillia. A branch line runs from Atherley to Washago along the east shore of Lake Couchiching.

Provincial highway No. 2 runs parallel to the Lake Ontario shore in the south and is supplemented by the dual highway No. 401. No. 12 highway connects Whitby, in the south with Orillia in the north and provides good communication throughout the length of the County. Highway No. 7 enters the County at Green River in Pickering Township and merges with No. 12 highway at Brooklin. There are other paved roads serving the County and numerous gravel and dirt roads provide suitable connecting links with the above highways.

The railways, roads and lakes provide a ready access to abundant markets both within the County and without. Toronto, one of the largest market centres in Canada, is just fifteen miles from the western boundary of the County.

Drainage System

Ten or twelve miles from the shores of Lake Ontario the land rises in a ridge to a height of 1,300 feet, and from this ridge the drainage channels flow north and south. The several small streams that flow south into Lake Ontario are the Rouge, Duffin's, Lynde's, Warren's and Black's Creeks. The drop in elevation is greater in the south and hence the streams are fast and narrow. The streams flowing north of the ridge are broad and slow, and large areas of cedar swamp occur along the stream courses. The Nonquon empties into Lake Scugog and the Trent Valley. The Black River passes through Uxbridge and Scott Townships to Lake Simcoe, and the Beaver River passes through the Townships of Brock and Thorah entering Lake Simcoe at Beaverton. The Talbot and another Black River flow into Lake Couchiching. The waters of Lake Simcoe and Couchiching drain into Georgian Bay via the Severn River.

DRAINAGE SYSTEM

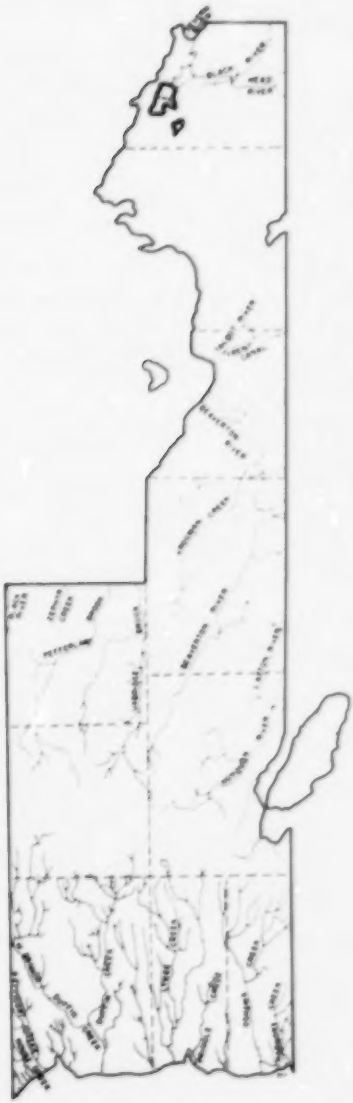


FIG. 3: Outline Map of Ontario County Showing the Drainage System.

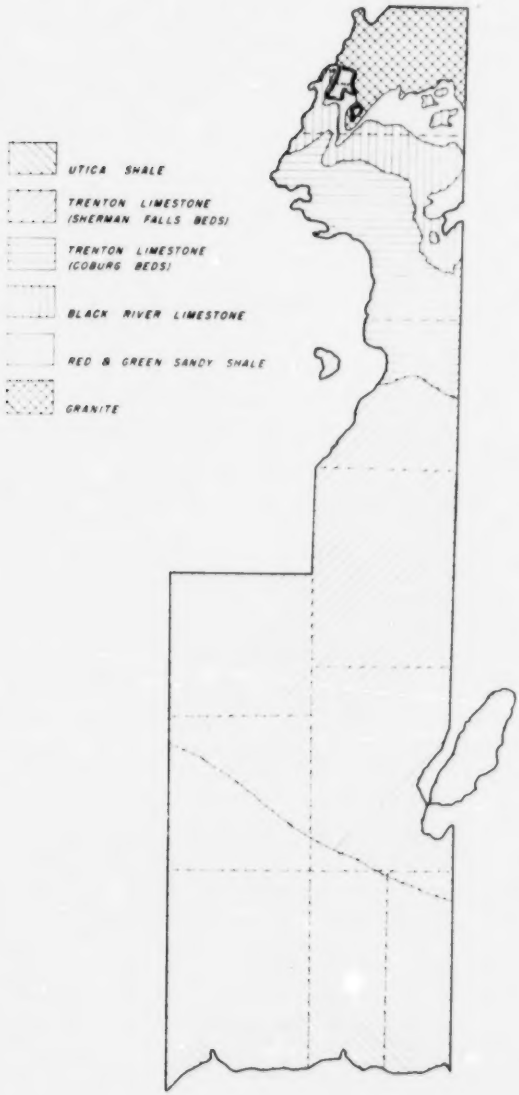


FIG. 4: Outline Map of Ontario County Showing Distribution of Bedrock.

PART II

FACTORS AFFECTING THE FORMATION OF SOILS IN ONTARIO COUNTY

Soil is a natural body occurring on the surface of the earth and is composed of organic and mineral materials. A mature soil normally develops as the result of the action of five factors, namely, climate, living organisms, relief, parent material, and age. Different combinations of these factors will produce different soils. The cumulative effect of all environmental factors is reflected in the soil profile. Soils must be studied as individuals and that study can only be carried out in the field where the whole soil can be investigated in its natural setting. Field soil surveys therefore consist of studying, identifying, and mapping soils in the field. The next step is to assemble, analyse, and interpret the facts about the soil and its relationship, and finally, to prepare and publish the results.

Soil Parent Materials

Ontario County is located in a region that was covered by a continental ice sheet during a past Geological age. The soil parent materials were derived mainly from the underlying rock formations, i.e. the soft limestone and shales. These materials were deposited by the ice itself or by lakes and streams which existed at the time of the retreat of the continental glacier. Glacial Lake Iroquois covered part of the southern region along the Lake Ontario Shore. Other glacial lakes giving rise to the Schomberg pondings were responsible for clay deposits around Lake Scugog and east of Uxbridge. Farther north, Lake Algonquin covered parts of Thorah, Mara, and Rama Townships.

An outline map of Ontario County is presented here to show the approximate boundaries of the different kinds of bedrock.* Most of the County is underlain by Trenton and Black River limestone that contains a high percentage of calcium carbonate and a low percentage of magnesium carbonate.

In the following scheme the soils of Ontario County are arranged according to the mode of deposition of the parent materials.

I. Till Deposits
   (a) Calcareous grey loam and sandy loam till.
   (b) Clay loam till derived from limestone and shale.
   (c) Calcareous brown loam till.
   (d) Calcareous loam till derived from limestone and granite.

II. Outwash Sands and Gravels.
   (a) Calcareous sands and gravels.
   (b) Non-calcareous sands.

III. Fluvio-Glacial Materials.

IV. Calcareous Clay over Clay Loam Till.

V. Lacustrine sediments.

VI. Outwash Sands Underlain by Loam Till.

VII. Igneous Rock Outcrop.

VIII. Organic Deposits.

* Caley, J. F., and Liberty, B. A. Canada Dept. of Mines and Technical Surveys.

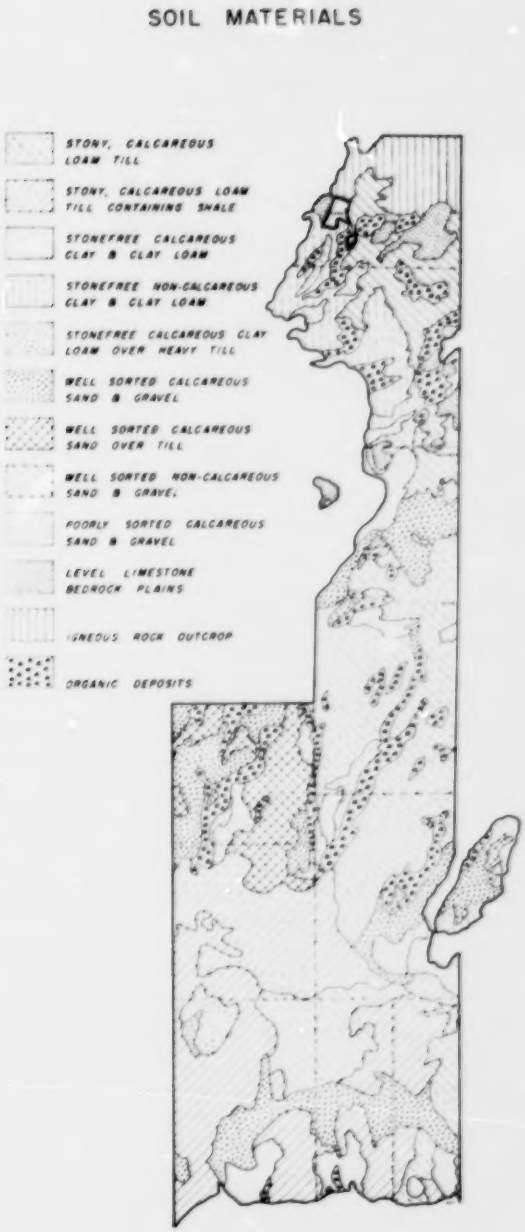

SOIL MATERIALS
STONY, CALCAREOUS LOAM TILL
STONY, CALCAREOUS LOAM TILL CONTAINING SHALE
STONEFREE CALCAREOUS CLAY & CLAY LOAM
STONEFREE NON-CALCAREOUS CLAY & CLAY LOAM
STONEFREE CALCAREOUS CLAY LOAM OVER HEAVY TILL
WELL SORTED CALCAREOUS SAND & GRAVEL
WELL SORTED CALCAREOUS SAND OVER TILL
WELL SORTED NON-CALCAREOUS SAND & GRAVEL
POORLY SORTED CALCAREOUS SAND & GRAVEL
LEVEL LIMESTONE BEDROCK PLAINS
IGNEOUS ROCK OUTCROP
ORGANIC DEPOSITS

FIG. 5: Outline Map of Ontario County Showing Distribution of Soil Parent Materials.

I. TILL DEPOSITS

Till by definition is that part of glacial drift deposited by and underneath the ice, with little or no transportation by water; it is generally an unstratified, unconsolidated, heterogeneous deposit of clay, silt, sand, gravel and boulders.

Four separations were made in the till as follows:

(*a*) *Calcareous Grey Loam and Sandy Loam Till.*

This till is derived for the most part from Trenton limestone and occurs in two main land forms, drumlins and ground moraines. The drumlins in Reach and Brock Townships are quite steep and occasionally deposits of gravel occur in pockets on the side of the drumlin. The till is grey in colour and generally quite stony. In the south part of the County the till is generally of loam texture, but in Brock, Reach, Scott and Thorah Townships the till is a sandy loam texture and contains many stones.

(*b*) *Clay Loam Till Derived from Limestone and Shale.*

In Pickering and Whitby Townships a calcareous till occurs that contains considerable quantities of black Utica shale. The till is clay loam in texture, although the surface texture is usually a loam or silt loam. The topography is usually moderately sloping and is dissected by numerous gullies. Drumlins did not form from these materials. Some boulders are scattered on the surface.

(*c*) *Calcareous Brown Loam Till*

A loam till composed of limestone and sandstone materials occurs in Pickering and Uxbridge Townships. The till is light olive brown in colour. These materials occur as ground moraines. The topography is generally gently to moderately sloping.

(*d*) *Calcareous Loam Till Derived from Limestone and Granite.*

In the north part of the County a low lime till occurs. The till is loam to sandy loam in texture. Because of the mixing of granitic materials, derived from the igneous rocks close by, with limestone, the till is only weakly calcareous. The topography consists of low drumlins and till plains. Numerous granitic boulders are scattered on the surface.

II. OUTWASH SANDS AND GRAVELS.

During the melting of the glacier, run-off waters carried rock materials which were laid down as deposits of sand, silt or clay depending on the velocity of flow of the water. In Ontario County large areas of sand and gravel soils occur, in which the materials were deposited in this way.

(*a*) *Calcareous Sands and Gravels*

Areas of sand and gravel occur in every Township in the County. The materials are in some instances stratified but sand is more widespread than gravel. The topography is gently sloping to level. In some areas in Whitby and Pickering Townships numerous boulders occur on the surface.

(*b*) *Non-calcareous Sands.*

In the northern part of the County are small areas of non-calcareous sands. The material is presumably derived from the granitic rock of the Precambrian shield. The topography is level to moderately sloping.

III. KAME MATERIALS

South of Lake Scugog and extending across the County is an elevated, hilly ridge composed of sands and gravels containing many large boulders and some till. This

material was deposited by melt-water from the glacial ice. The topography is often very steep and quite complex.

IV. LACUSTRINE CALCAREOUS CLAY OVER CLAY LOAM TILL.

A very small area of shallow clay deposits over fine textured till occurs in Pickering Township adjacent to the York County boundary. These materials are calcareous. The topography is very gently sloping.

V. LACUSTRINE SEDIMENTS.

Clay deposits of lacustrine origin occur in many different parts of Ontario County. In Pickering and Whitby Townships these materials were deposited when glacial Lake Iroquois covered parts of this area. Similar deposits occur around Lake Scugog, Lake Simcoe, and Lake Couchiching. Other smaller lacustrine deposits are unrelated to present day lakes.

The clay soils in Whitby and Pickering Townships and those around Lake Scugog are composed of highly calcareous materials. The surface soil will usually effervesce with dilute acid. The topography ranges from level to gently sloping.

A few small areas of lacustrine soils occur in Brock and Thorah Townships that range in texture from a silt loam to a fine sandy loam. The topography is nearly level.

In Mara and Rama Townships are areas of lacustrine soils that are low in lime content. The parent material is a light brownish grey colour. This material occurs in association with the low lime till soils in these Townships.

VI. OUTWASH SANDS UNDERLAIN BY LOAM TILL.

Large areas of sands occur in Scott Township. The sand is underlain at varying depths by calcareous loam till. The upper part of the profile is stonefree but the underlying till is stony. The topography is moderately sloping.

VII. ROCK LAND

A large part of Rama Township is included within the Precambrian Shield. In this area the granite rock is exposed with pockets of fine sediments scattered among them. In some cases these pockets consist of sand, in other cases they are clay sediments.

VIII. ORGANIC DEPOSITS

Organic deposits occur in all parts of the County. These deposits are usually found adjoining stream courses or near lakes. They vary in composition, depth and reaction.

Climate

Ontario County, extending from the 43° 50′ parallel to the 44° 50′ parallel, includes several climatic regions as designated by Putnam and Chapman.* These regions from south to north are: Lake Ontario shore; South slopes; Simcoe and Kawartha Lakes; and Muskoka. The climate ranges from a moderate one along Lake Ontario to one with colder winters and more backward springs farther inland.

The only meteorological station in the County is located at Uxbridge where climatic data has been collected for 29 years. The Uxbridge station is in the Simcoe and Kawartha Lakes region. The station at Orono in Durham County, located in the South Slopes region, serves as a guide to weather conditions in the south part of Ontario County. The station at Orillia, in the Simcoe and Kawartha Lakes region, serves as a guide to weather conditions in the north part of Ontario County.

* Putnam, D. F. and Chapman, L. J. The Climate of Southern Ontario: Sci. Agr. 18: 8 Apr. 1938.

The mean monthly and annual temperatures for several selected points are given in Table II. The average annual temperature at Orono is one degree higher than that at Uxbridge and two degrees higher than that at Orillia. The winter temperatures are noticeably higher at Orono than at Orillia or Uxbridge.

The mean monthly and annual precipitations for several selected points are given in Table III. The precipitation at Orono is two inches more than at Orillia and four inches more than at Uxbridge.

The average length of frost-free period in the Lake Ontario Shore region is 145 days, the South Slopes region is 135 days, and Simcoe and Kawartha Lakes region is 130 days.

TABLE II

MONTHLY AND ANNUAL AVERAGES OF DAILY MEAN TEMPERATURE

FOR SEVERAL SELECTED POINTS

	PERIOD OF RECORD	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
Uxbridge	29	18	16	26	40	53	63	68	65	58	46	34	22	43
Orillia	38	17	14	26	40	53	63	68	66	59	47	34	21	42
Orono	—	21	19	29	41	52	63	68	66	59	46	36	24	44
Lindsay	57	16	16	26	41	54	64	68	66	59	46	34	21	42
Guelph	44	20	18	29	42	54	63	68	66	59	48	36	24	44
Ottawa	65	12	13	24	41	55	65	70	60	58	46	32	17	42

TABLE III

AVERAGE MONTHLY AND ANNUAL PRECIPITATION IN INCHES

FOR SEVERAL SELECTED POINTS

	PERIOD OF RECORD	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
Uxbridge	29	2.64	1.95	1.98	2.37	2.67	2.25	3.51	2.99	2.45	2.51	2.44	2.12	29.94
Orillia	38	2.63	2.21	2.00	1.95	2.68	2.80	2.79	2.56	3.09	3.16	3.40	2.99	32.26
Orono	—	3.58	2.56	3.01	2.99	2.51	3.02	2.47	2.47	2.83	2.29	3.65	2.84	34.22
Lindsay	57	2.94	2.39	2.42	2.24	2.85	2.91	3.07	2.81	3.06	2.68	2.86	2.60	32.83
Guelph	44	2.39	1.74	1.79	2.38	2.72	2.84	3.07	2.86	2.50	2.39	2.44	2.14	29.26
Ottawa	65	2.93	2.17	2.77	2.70	2.47	3.52	3.39	2.56	3.23	2.93	2.98	2.58	34.23

Vegetation

Ontario County is classed as belonging to the Great Lakes-St. Lawrence forest region-Huron-Ontario Section according to Halliday.*

The type of vegetation that grows in an area is dependent on climate and soil conditions. Once vegetation is established, however, it exerts considerable influence on soil development.

* Halliday, W. E. D., A forest Classification for Canada. Bull. 89, Forest Science, Dept. of Mines and Resources.

On the well drained clay and till soils the predominant forest vegetation is sugar maple, elm and beech, with ash, oak, pine, and spruce occurring in lesser numbers.

Elm, soft or red maple, willow, poplar and spruce occur on the imperfectly and poorly drained clays and tills.

The coarse textured soils usually have a greater variety of trees. White pine, cedar, white birch, sugar maple, and spruce are abundant. Reforested areas have generally been planted to white, scotch, and jack pine.

The association of cedar and white birch is found on the shallow soils overlying limestone bedrock.

On the granite rock areas in North Rama Township the white birch, rock elm, and pine association occurs.

On the very poorly drained organic deposits of the County are found white birch, yellow birch, white cedar, and swamp elm. Tamarack, black spruce, and alder occur frequently.

Relief

Ontario County has a varied and irregular relief. The topography ranges from level to undulating in the south to steeply sloping in the Central portion, levelling out again towards the north.

The altitude of the County rises from 275 feet in the south to 1,300 feet near Chaulk Lake, south of Uxbridge, and gradually drops to 750 feet around Lake Simcoe.

Level to undulating clay plains and till plains occur in the south of Whitby and Pickering Townships. A sand and gravel glacial lake shoreline separates these plains from the drumlinized area in north Pickering and Whitby Townships. The very steep, complex slopes of an interlobate moraine crosses the County south of Lake Scugog. The drumlins of Scott, Reach, and Brock Townships are for the most part steeper than those of Whitby and Pickering Townships. Level to undulating clay and sand plains predominate in Thorah and Mara Townships. Low drumlins occur in these Townships as well.

PART III

THE CLASSIFICATION AND DESCRIPTION OF ONTARIO COUNTY SOILS

Classification of Soils

On the basis of profile characteristics the soils of the County have been classified into types, series and great soil groups.

In the well drained positions the following great soil groups are represented; Grey-Brown Podzolic, Brown Forest and Podzol. Poorly drained soils include the Dark Grey Gleisolic and Organic.

The characteristics of each of the Great Soil Groups is given by a profile description of a soil in which that kind of development is best expressed. The Grey-Brown Podzolic group is represented by the Bondhead loam, a well drained soil developed under deciduous vegetation from a calcareous loam till.

A_{00}—Thin mat of raw and partially decomposed leaves;

A_1 —0-4 inches very dark grey (10 YR 3/1)* loam, fine crumb structure; very friable consistency; pH—6.8

A_{21}—4-9 inches yellowish brown (10 YR 5/6) sandy loam; weak platy structure; very friable consistency; pH—6.6

A_{22}—9-13 inches pale brown (10 YR 6/3) sandy loam; weak platy structure; very friable consistency; pH—6.7

B_2 —13-17 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky; friable consistency; stony; pH—7.0

B_3 —17-20 inches dark yellowish brown loam (10 YR 4/4); medium subangular blocky; friable consistency; stony; pH—7.4

C —pale brown (10 YR 6/3) calcareous loam till; stony; pH—8.0

The Brown Forest group is represented by the soil type, Otonabee loam. This soil has developed from a calcareous loam till under a deciduous vegetation. The profile is shallower than that found in the Grey-Brown Podzolic region. The Brown Forest region is in the Brock-Thorah township area. The following is a profile description of the Otonabee loam.

A_{00} —$\frac{1}{2}$-0 inch very thin mat of raw and partially decomposed leaves.

A_1 —0-6 inches very dark greyish brown (10 YR 3/2) loam; fine crumb structure; very friable consistency; pH 7.2

B_1 —6-9 inches pale brown (10 YR 6/3) loam; weak platy structure; very friable consistency; pH—7.0

B_2 —9-15 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky; friable consistency; pH—7.2

C —Light brownish grey (10 YR 6/2) limestone loam till; stony; pH—8.0

* Colour code number as taken from "Munsell Colour Chart".

A Grey-Brown Podzolic Soil Profile.

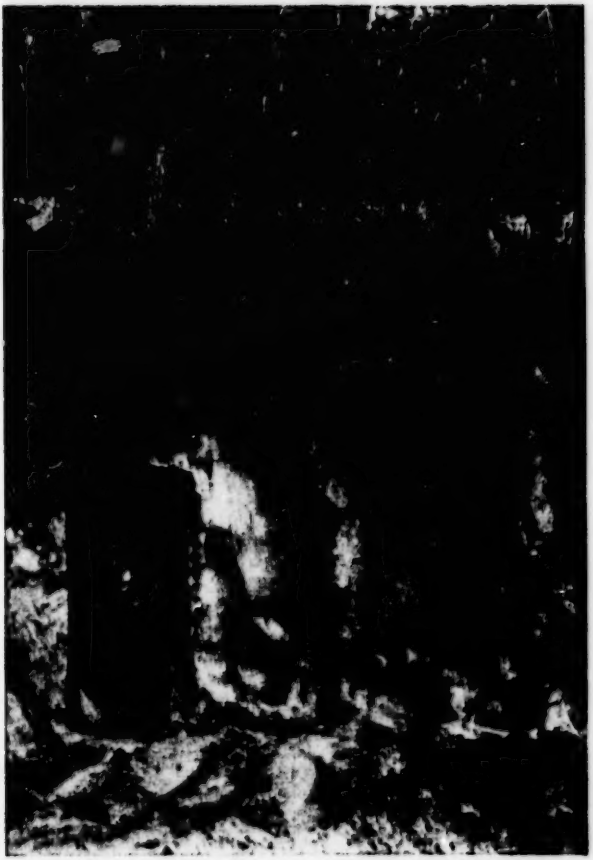
The Podzol group is represented by the soil type, Wendigo sandy loam. This soil has developed from non-calcareous sand and under mixed forest vegetation. The Podzol soils occur in Thorah, Mara, and Rama Townships. A description of this soil is as follows.

A_0 — very thin mat of coniferous litter.

A_1 — 0-1 inch very dark grey (10 YR 3/1) sandy loam; fine crumb structure; extremely friable consistency; pH— 6.0

A_2 — 1-3 inches light grey (10 YR 7/1) sand; weak crumb structure; pH 5.6

A_{21} — 3-10 inches strong brown (7.5 YR 5/8) sand; very weak medium crumb structure; extremely friable consist-



A Podzol Soil Profile

ency; pH—5.8

B_{22}—10-24 inches brownish yellow (10 YR 6 6) sand; very weak medium crumb structure; extremely friable consistency; pH—6.2

C —light grey (10 YR 7 2) single grained, non-calcareous sand; pH—6.0

The poorly drained mineral soils in Ontario County are classified as Dark Grey Gleisolic. Semi-permanent water saturated conditions, together with a decrease in soil air, and lower soil temperatures have resulted in a much different type of profile from the previous groups. The Granby sandy loam is representative of the soils in this group.

A Dark Grey Gleisolic Soil Profile

A_0 —Thin mat of decomposed leaf litter.

A_1 —0-8 inches very dark brown (10 YR 2/2) sandy loam; fine crumb structure; extremely friable; very high in organic matter; pH—7.2

G_1 —8-16 inches light brownish grey (10 YR 6/2) sand; single grain structure; mottled; pH—7.2

G_2 —16-20 inches yellowish brown (10 YR 5/6) and grey (10 YR 5/1) sandy loam; highly mottled; weak medium sub-angular blocky; pH 7.4

C —Pale brown (10 YR 6/3) sand; calcareous; pH—8.0

A Brown Forest Soil Profile

In very poorly drained areas organic deposits of varying depths occur. The terms organic soil and shallow organic soil, depending on the depth, are used to designate these soils.

Soil series occurring on similar parent materials within a soil zone, but differing significantly in profile characteristics as a result of differences in drainage, are grouped together into a unit called a "catena".

The following key consists of the soils of the County grouped on a "catena" basis. Each group therefore may consist of two or more series.

A. Soils Developed from Grey Loam and Sandy Loam Till

	Acreage Mapped
I. Bondhead Catena	
(a) Good Drainage	
1. Bondhead loam (G.B.P.)*	28,300
2. Bondhead sandy loam (G.B.P.)	47,100
(b) Imperfectly Drained	
1. Guerin loam (G.B.P.)	4,300
(c) Poorly Drained	
1. Lyons loam (D.G.G.)	2,700
II. Otonabee Catena	
(a) Good Drainage	
1. Otonabee loam (B.F.)	25,500
2. Otonabee sandy loam (B.F.)	18,600
(b) Imperfect Drainage	
1. Emily loam (B.F.)	3,600
2. Emily loam—shallow phase (B.F.)	4,200

B. Soils Developed from Clay Loam Till Derived From Limestone and Shale.

I. Darlington Catena	
(a) Good Drainage	
1. Darlington loam (G.B.P.)	20,700
(b) Imperfect Drainage	
2. Whitby loam (G.B.P.)	2,200

C. Soils Developed from Calcareous Brown Loam Till

I. Woburn Catena	
(a) Good Drainage	
1. Woburn loam (G.B.P.)	19,900
2. Woburn sandy loam (G.B.P.)	4,500
(b) Imperfect Drainage	
1. Milliken loam (G.B.P.)	10,100
2. Milliken loam—stony phase (G.B.P.)	300

D. Soils Developed from Loam Till Derived from Limestone and Granite

I. Vasey Catena	
(a) Good Drainage	
1. Vasey loam (B.P.)	3,800
2. Vasey sandy loam (B.P.)	400

E. Soils Developed from Outwash Sands and Gravels

I. Brighton Catena	
(a) Good Drainage	
1. Brighton sandy loam (G.B.P.)	42,700
2. Brighton sandy loam—stony phase (G.B.P.)	500
3. Brighton gravelly sandy loam (G.B.P.)	4,800
(b) Imperfect Drainage	
1. Tecumseth sandy loam (G.B.P.)	12,200
2. Tecumseth sandy loam—stony phase (G.B.P.)	900
(c) Poor Drainage	
1. Granby sandy loam (D.G.G.)	9,900
II. Sargent Catena	
(a) Good Drainage	
1. Sargent sandy loam (B.F.)	1,300
III. Wendigo Catena	

*G.B.P. —Grey-Brown Podzolic
D.G.G.—Dark Grey Gleisolic
B.F. —Brown Forest
B.P. —Brown Podzolic
P. —Podzol

(a) Good Drainage
1. Wendigo sandy loam (P.) 5,200
(b) Imperfect Drainage
1. Mallard sandy loam (P.) 9,000
(c) Poor Drainage
1. Kenabeek sandy loam (D.G.G.) 6,300

IV. Pontypool Catena
(a) Good Drainage
1. Pontypool sand (G.B.P.) 10,800
2. Pontypool sandy loam (G.B.P.) 42,700

F. Soils Developed from Outwash Materials Underlain by Loam Till

I. Dundonald Catena
(a) Good Drainage
1. Dundonald sandy loam (G.B.P.) 23,300

G. Soils Developed from Calcarreous Clay over Clay Till

I. Cashel Catena
(a) Imperfect Drainage
1. Peel clay loam (G.B.P.) 5,600

H. Soils Developed from Lacustrine Sediments

I. Schomberg Catena
(a) Good Drainage
1. Schomberg clay loam (G.B.P.) 15,000
2. Schomberg silt loam (G.B.P.) 300
(b) Imperfect Drainage
1. Smithfield clay loam (G.B.P.) 15,600
(c) Poor Drainage
1. Simcoe clay loam (D.G.G.) 7,400

II. Medonte Catena
(a) Imperfect Drainage
1. Lovering clay loam (G.B.P.) 16,300
(b) Poor Drainage
1. Atherley clay loam (D.G.G.) 3,500

III. Percy Catena
(a) Imperfect Drainage
1. Trent fine sandy loam (G.B.P.) 1,400

I. Shallow Soils Over Limestone Bedrock

I. Farmington Catena
(a) Variable Drainage
1. Farmington loam (B.F.) 12,700

J. Rock Land 16,300

K. Soils Developed on Flood Lands Along Stream Courses

1. Bottom Land 24,900

L. Soils Developed from Organic Deposits

1. Muck 55,500
2. Peat 200

M. Miscellaneous Soils

1. Marsh 5,400

A. SOILS DEVELOPED FROM GREY LOAM AND SANDY LOAM TILL.

Over a large area of the southern half of Ontario County the soil materials consist of till derived from limestone of the Trenton formation.

The soils developed from these materials are separated into three great soil groups. The Grey-Brown Podzolic group contains the Bondhead and Guerin series; the Brown Forest Group contains the Otonabee and Emily series; and the Dark Grey Gleisolic group contains the Lyons series.

Bondhead Series (75,400 acres)

The Bondhead soils are developed from loam and sandy loam calcareous till. The till is light brownish grey in color and contains numerous limestone fragments.

These soils occupy an area of approximately 75,000 acres in the southern part of the County extending from Whitby in the south to Lake Simcoe in the north. The soils of this series also occurs in York, Simcoe, Durham and Victoria Counties.

The topography ranges from gently sloping to steeply sloping, but in general the steeper slopes are more frequent. The soils are open and therefore have good internal drainage. Stones and boulders are common but can be readily removed.

The Bondhead series is composed of the following types:

Bondhead loam (28,300 acres)
Bondhead sandy loam (47,100 acres)

A description of an uncultivated Bondhead loam is as follows:

Smooth sloping topography of the Bondhead series.

A_0 —Thin mat of partially decomposed leaves, etc.

A_1 —0-4 inches very dark grey (10 YR 3/1) loam; fine crumb structure; very friable consistency; few stones; pH—7.1

A_{21}—4-10 inches yellowish brown (10 YR 5/6) sandy loam; weak platy structure; very friable consistency; few stones; pH—7.0.

A_{22}—10-16 inches pale brown (10 YR 6/3) sandy loam; weak platy structure; very friable consistency; few stones; pH—6.8.

B_2 —15-22 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky structure; friable consistency; few stones; pH—7.1.

C —Pale light brownish grey (10 YR 6/3) calcareous loam till; pH—8.0.

Agricultural Use

Practically all of the Bondhead soils are used for agricultural purposes. Dairy farming is the main enterprise, consequently grain, hay and pasture are the chief crops grown. The soils are suitable for growing many different crops, but erosion control must be practised, especially on the steeper slopes. Erosion can be serious under the present system of cultivating up and down the hill. Canning crops grow well on these soils but for best results fertilizer and manure must be used.

Guerin Series (4,300 acres)

The Guerin soils are developed from calcareous loam till. The till is light brownish grey in color and contains numerous limestone fragments.

The Guerin series is the imperfectly drained member of the Bondhead catena and occurs in association with the Bondhead soils. These soils occupy an area of approximately 4,300 acres in southern Ontario County. The series is also mapped in York, Durham, and Victoria Counties.

The topography ranges from very gently sloping to gently sloping. The external drainage is slow because of the low slopes on which the soils occur. The internal drainage is slow. Stones and boulders that occur can be readily removed.

Guerin loam was the only type mapped in the County.

A description of a cultivated soil is as follows.

A_1 —0-9 inches very dark brown (10 YR 2/2) loam; fine crumb structure; very friable consistency; few stones; calcareous; pH—7.8.

A_2 —9-15 inches very dark grey-brown (10 YR 3/2); loam; fine subangular blocky structure; friable consistency; mottled; calcareous; pH—7.6.

B_2 —15-20 inches yellowish brown (10 YR 5/4); clay loam; medium subangular blocky structure; friable consistency; mottled; calcareous; pH—7.9.

C —Light brownish grey (10 YR 6/2) loam; gritty calcareous till; pH—8.0.

Agricultural Use

Drainage is the main limiting factor in the production of good crops on these soils. In order to use them for a wide range of crops, drainage has to be improved. Alfalfa, fall wheat, and certain canning crops can be grown more successfully after the soil has been tile drained. Erosion is not serious, because the topography is generally not steep enough to cause rapid run-off. The soil is suitable for growing hay and pasture, as well as many other general crops.

Lyons Series (2,700 acres)

The Lyons series occurs in association with several soils, namely Bondhead, Darlington, Otonabee, Woburn, Vasey, Whitby, Guerin and Emily. The profile is characteristic of the Dark Grey Gleisolic group. The surface horizon was a high percentage of organic matter and the remaining horizons are mottled.

These soils occur on level and depressional topography. Both the surface drainage and the internal drainage are poor.

The following is a description of a Lyons loam profile.

A_c —0-9 inches very dark greyish brown (10 YR 3/2) loam; fine to medium crumb structure; pH 7.1

G —9-20 inches yellowish brown (10 YR 5/4) clay loam; mottled; medium subangular blocky to massive structure; pH 7.9

C —Light brownish grey (10 YR 6/2) loam to clay loam; mottled; calcareous stony till; pH 8.0

Agricultural Use

The Lyons series, being poorly drained, is unsuitable for most farm crops. Some hay and oats are grown, however most of the soil is in pasture.

Otonabee Series (44,100 acres)

The Otonabee soil is developed from a loam and sandy loam till. The parent material is very calcareous and contains many limestone fragments.

These soils occupy an area of approximately 44,100 acres in the central part of Ontario County. The soils of this series also occurs in York, Durham and Victoria Counties.

The topography ranges from smooth very gently sloping to smooth steeply sloping but the steeper slopes are more common. The soils are well drained both internally and externally. Stones and boulders are very common but can be removed easily.

The solums are comparatively shallow, averaging about 15 inches in depth. Most of the soils of the Otonabee series are representative of the Brown Forest Great Soil Group. However, a weakly developed A_2 horizon is not uncommon in some soils of this series. The latter represents transition stages or intergrades between the Grey-Brown Podzolic and Brown Forest groups of soils. Because of their intricate pattern and irregular distribution it has not been possible to separate these closely related soils into separate series.

The Otonabee loam (25,500 acres) and the Otonabee sandy loam (18,600 acres) are

the types mapped in the County.

A profile description is as follows:

A_0 —Thin layer of partially decomposed leaf litter.

A_1 —0-4 inches very dark greyish brown (10 YR 3/2) loam; fine crumb structure; very friable consistency; stony; calcareous; pH—7.6.

B_1 —4-8 inches pale brown (10 YR 6/3) loam; weak fine subangular blocky structure; very friable consistency; stony; calcareous; pH—7.4.

B_2 —8-16 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky structure; firm consistency; stony; calcareous; pH—7.6.

C —Light brownish grey (10 YR 6/2) loam till; very stony; calcareous; pH—8.0.

Agricultural Use

Most of the land has been cleared and is used principally for general farming. Cereal grains, hay, clover, ensilage corn, and pasture are the crops most commonly grown.

When used for the growing of inter-tilled crops, the need for erosion control is great. This is especially true because of the relative shallowness of the profile and the steepness of the slopes. A good proportion of hay and clover will protect the soil against erosion and at the same time help maintain the organic matter content.

The soils are medium in fertility and have a high lime content.

Hillside erosion on the Otonabee soils.

Emily Series (7,800 acres)

The Emily series is the imperfectly drained member of the Otonabee catena, and occurs in association with the Otonabee soils. The soil is developed from a loam and sandy loam till. The parent material is very calcareous and contains many limestone fragments.

The Emily series occupies an area of 7,800 acres in the central part of the County, and occurs as well in Victoria and Hastings Counties.

The topography on which this series occurs is nearly level to gently undulating. The external and internal drainage is fair. The underlying bedrock occurs in some areas, at a depth of 1 to 3 feet from the surface and such soils were mapped as a shallow phase. Stones and boulders are common but do not prevent cultivation.

The soils are neutral to alkaline in reaction throughout the profile but are highly calcareous in the parent material. The solum is about 15 inches deep.

The Emily series contains only one type, the Emily loam (3,600 acres) and a phase of that type, Emily loam—shallow phase (4,200 acres)

The profile has the following characteristics:

A_c —0-8 inches very dark brown (10 YR 2/2) loam; coarse granular structure; friable consistency; stony; calcareous; pH—7.4

B_2 —8-13 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky structure; plastic consistency; mottled; calcareous; pH—7.4

C_1 —Yellowish brown (10 YR 5/6) loam to clay loam; till; mottled; calcareous.

C_2 —Grey (10 YR 5/1) loam till; calcareous; pH—8.0

Agricultural Use

Soils of the Emily series are used extensively as grazing land for beef cattle. Hay and oats are grown with fair success, but the imperfect drainage restricts the growing of wheat and alfalfa.

Tile drainage would improve the productivity of the soil and allow a greater range of crops to be grown. On the Emily loam—shallow phase the bedrock is too close to the surface to permit extensive drainage improvement.

B. SOILS DEVELOPED FROM CLAY LOAM TILL DERIVED FROM LIMESTONE AND SHALE.

In the southeast corner of the County, the soil materials consist of till derived from limestone of the Trenton formation and black shale of the Utica formation. The texture of the till varies from a loam to a clay loam and is light brownish grey in colour.

The soils developed from these materials are Grey-Brown Podzolic.

Darlington Series (20,700 acres)

Darlington soils are mapped in Whitby and Pickering Townships in Ontario County as well as in Durham and Victoria Counties.

The soils occur on gently sloping to steeply sloping topography. The drainage is good to moderately good. The surface reaction is usually slightly alkaline and the parent material is highly calcareous. The surface texture varies from a loam to a silt loam. The average depth of the solum is 24 inches.

A description of an uncultivated Darlington loam is as follows:

A_0 —Very thin mat of partially decomposed leaves, etc.

A_1 —0-4 inches very dark grey (10 YR 3/1) loam; crumb structure; very friable consistency; very few stones; pH—7.2.

A_{21}—4-10 inches light brownish yellow (10 YR 6/4) loam; weak platy and fine crumb structure; very friable consistency; pH—7.0.

A_{22}—10-15 inches light grey (10 YR 7/2) loam; fine crumb structure; very friable consistency; pH—6.9.

B_2 —15-23 inches dark brown (10 YR 4/3) clay loam; medium subangular blocky and medium blocky structure; plastic consistency; pH—7.0.

C —Light brownish grey (10 YR 6/2) loam to clay loam till; calcareous; few stones; pH—8.0.

Agricultural Use

Most of the soils of the Darlington series are used to grow crops in support of the dairy industry. The soil is fertile and high yields of corn, grain and hay are produced. Canning crops and apples are also grown successfully.

In the use of intertilled crops, erosion control has to be considered. Gully and sheet erosion has been very common on these soils.

Whitby Series (2,200 acres)

The Whitby series is the imperfectly drained member of the Darlington catena, and is mapped in association with the Darlington soils. The soils are developed from loam to clay loam calcareous till. The surface horizon varies in texture from a loam to a silt loam.

The topography varies from very gently sloping to gently sloping.

Few stones and boulders occur within the profile and on the surface.

Only one type, Whitby loam, has been mapped.

A description of a cultivated profile is as follows:

A —0-8 inches very dark brown (10 YR 2/2) loam to silt loam; medium crumb structure; very friable consistency; very few stones; pH—7.0.

A_2 —8-15 inches brown (10 YR 5/3) loam; medium subangular blocky structure; friable consistency; mottled; few stones; pH—7.1.

B_2 —15-25 inches yellowish brown (10 YR 5/4) clay loam; medium to large blocky structure; mottled; pH—7.0.

C —Light brownish grey (10 YR 6/2) loam to clay loam till; mottled; calcareous; few stones; pH—8.0.

Agricultural Use

Imperfect drainage is the main limiting condition in the production of a variety of crops on these soils. The soils are well suited for the production of hay, pasture and spring grain. With improved drainage, fall wheat and alfalfa may be grown successfully. Erosion is not serious.

C. SOILS DEVELOPED FROM CALCAREOUS BROWN LOAM TILL.

In Pickering and the southern part of Uxbridge Townships there are areas in which the till materials differ somewhat from the till materials in the two previous classes. The soil materials consist of till derived from Trenton limestone and an olive coloured sandstone. The mixture of these materials results in a light olive brown till. The texture of the till varies from a sandy loam to a loam and silt loam. The till is moderately stony.

The soils developed from these materials are classified as Grey-Brown Podzolic.

Woburn Series (24,400 acres)

The Woburn series is the well drained soil developed from loam, calcareous till.

These soils occupy an area of approximately 24,400 acres in Pickering and Uxbridge Townships. They are also mapped in York and Peel Counties.

The topography on which the Woburn series occurs is moderately sloping. The soils are well drained both internally and externally. Few stones and boulders occur on the surface.

The following is a description of a Woburn loam:

A_0 —Thin partially decomposed leaf litter.

A_1 —0-4 inches very dark brown (10 YR 2/2) loam; fine crumb structure; very friable consistency; very few stones; pH—6.8.

A_{21} —4-10 inches pale brown (10 YR 6/3) sandy loam; platy structure; very friable consistency; pH—6.6.

A_{22} —10-14 inches light brownish grey (10 YR 6/2) sandy loam; medium subangular blocky structure; pH—6.6.

B_2 —14-20 inches dark yellowish brown (10 YR 4/4) clay loam; medium blocky structure; pH—6.8.

B_3 —20-27 inches grey-brown (10 YR 5/2) clay loam; medium blocky structure; pH—7.0.

C —Light olive-brown (2.5 Y 5/4) loam till; pH—7.8.

Agricultural Use

The Woburn series is used mainly for the production of hay, pasture and grain. Alfalfa, fall wheat, and corn can be grown successfully. Canning crops, such as tomatoes and peas, produce well in some locations, but care must be taken to prevent erosion.

Milliken Series (14,100 acres)

The Milliken series is the moderately well drained to imperfectly drained member of the Woburn catena. The soils are developed from a medium textured calcareous till.

The topography is gently sloping to very gently sloping. Mottling occurs in the lower horizons of the soil. The soils are only slightly stony.

Only one type, Milliken loam, was mapped. A cultivated profile has the following characteristics:

A_c —0-8 inches very dark grey-brown (10 YR 3/2) loam; fine crumb structure; very friable consistency; few stones; pH—7.0.

A_2 —8-14 inches yellowish brown (10 YR 5/4) loam; fine subangular blocky structure; very friable; slight mottling; pH—7.0.

B_2 —14-19 inches dark yellowish brown (10 YR 4/4) clay loam; medium subangular blocky structure; slight mottling; pH—7.2.

C —Light olive-brown (2.5 Y 5/4) loam; pH—7.9.

Agricultural Use

The Milliken soils are suitable for growing a wide variety of crops. Alfalfa and fall wheat may not be too successful because of inadequate drainage. Hay and grain are the chief crops grown but canning crops are also grown to some extent. Much of the land is used for pasture.

D. SOILS DEVELOPED FROM LOAM TILL DERIVED FROM LIMESTONE AND GRANITE

In Mara and Rama Townships, in the northern part of the County, the soil materials are derived from crystalline limestone and granitic rock. These materials produce a till that is weakly calcareous. The parent material varies in texture from a sandy loam, and is pale brown in colour. The till is moderately stony and many granitic boulders are scattered over the surface.

The soils developed from these materials are tentatively classified as Brown Podzolic with remnants of the former Grey-Brown Podzolic B horizon deep in the profile. The Vasey series was the only one mapped on these materials in Ontario County.

Vasey Series (4,500 acres)

The Vasey soils are well drained and occur on an undulating ground moraine. The texture of the soil varies from a loam to a sandy loam.

These soils occur in Mara and Rama Townships and also in Simcoe County.

A considerable number of stones and boulders occur on the surface.

Vasey loam (3,800 acres) and Vasey sandy loam (400 acres) are the two types mapped.

A virgin profile has the following characteristics:

A_0 —Thin partially decomposed leaf litter.

A_1 —0-4 inches very dark grey-brown (10 YR 3/2) loam; fine crumb structure to fine granular structure; very friable consistency; stony; pH—4.7.

$B_{B.P.}$—4-8 inches dark brown (7.5 YR 4/2) loam; coarse crumb structure to coarse granular structure; very friable consistency; few stones; pH—6.0.

A_{22}—8-15 inches dark brown (7.5 YR 4/4) loam; fine subangular blocky structure; friable consistency; few stones; pH—6.8.

B_2 —15-27 inches dark brown (7.5 YR 4 4) loam; coarse subangular blocky structure; hard consistency; few stones; pH—7.0. (This horizon may sometimes be absent).

C —Light brownish grey (10 YR 6 2) loam; stony; slightly calcareous; pH—7.4.

Agricultural Use

These soils are used for general farming, with the raising of beef cattle as the principal farm enterprise. Hay and grain are the chief crops grown.

E. SOILS DEVELOPED FROM OUTWASH SANDS AND GRAVELS

Areas of outwash sand and gravel occur throughout the County. The majority of this material is sand, but small areas of stratified gravel also occur.

The soils developed from these materials are classified into several great soil groups. The Brighton and Tecumseth series are classified as Grey-Brown Podzolic soils. The Sargent series is a Brown Forest soil and the Wendigo and Mallard are Podzols. The Granby and Kenabeek series are Dark Grey Gleisolic.

Brighton Series (48,000 acres)

The Brighton soils are developed from light brownish grey coarse textured sand and gravel. The surface texture is usually sandy loam. The parent materials, that occur at a depth of approximately 24 inches, are calcareous. The profile in some areas is more characteristic of a Brown Podzolic soil than a Grey-Brown Podzolic soil. The Brown Podzolic B horizon often is quite prominent directly beneath the A_1 horizon. Furthermore the Grey-Brown Podzolic B horizon is very thin and poorly defined in some profiles.

The Brighton series is mapped in every Township except Mara and Rama. These soils also occur in the other Counties in South-Central Ontario.

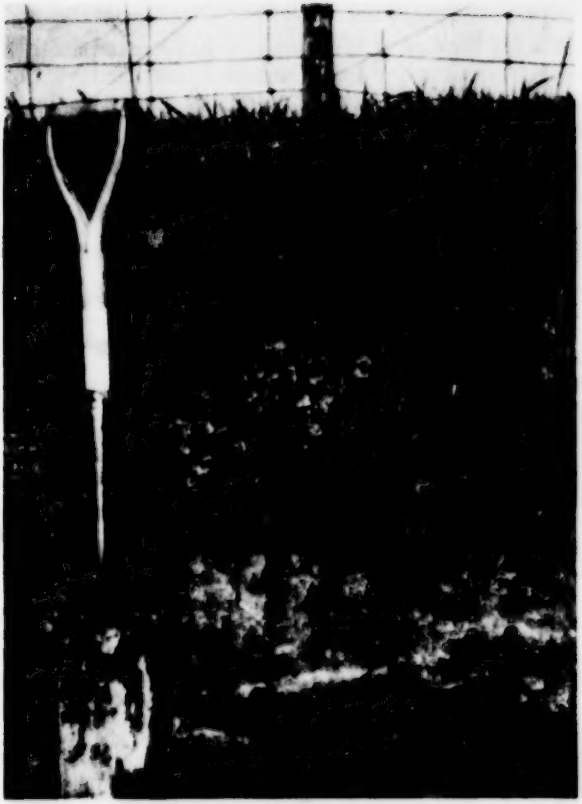
Very gently sloping to level topography characterize the Brighton series. In some areas the topography is moderately sloping, especially near the stream courses. External and internal drainage is good in spite of the nearly level topography. In some areas many boulders are present on the surface, and these have been mapped as a stony phase.

The following types were mapped in the Brighton series:

Brighton sandy loam (42,700 acres)

Brighton gravelly sandy loam (4,800 acres)

Brighton sandy loam—stony phase (500 acres)



A Brighton sandy loam profile showing the thin Grey-Brown Podzolic B horizon.

A Brighton sandy loam profile has the following characteristics:

A_1 —0-6 inches dark greyish brown (10 YR 4/2) sandy loam; weak crumb structure; extremely friable consistency; pH—6.5.

A_{21}—6-18 inches brownish yellow (10 YR 6/6) sand; single grain structure; loose consistency; pH—6.8.

A_{22}—18-21 inches very pale brown (10 YR 7/3) sand; very weak platy or single grain structure; loose consistency; pH—6.8.

B_2 —21-24 inches strong brown (7.5 YR 5/6) sandy loam; weak medium subangular blocky structure; friable consistency; pH—7.0.

C —Light brownish grey (10 YR 6/2) sand; calcareous; pH—7.8.

The Brighton gravelly sandy loam has a shallower profile than the Brighton sandy loam.

Agricultural Use

The Brighton soils, because of the coarse textured materials of which they are composed, are low in fertility and low in organic matter content. Commercial fertilizer and manure are necessary to obtain good yields. Market garden crops are grown extensively on these soils. Tobacco is grown in some areas. These sandy and gravelly soils are droughty during mid-summer.

Tecumseth Series (13,100 acres)

The Tecumseth series is the imperfectly drained member of the Brighton catena.

These soils occur in small areas throughout the County. The series is also mapped in York, Durham, Victoria and Northumberland Counties.

The topography on which the Tecumseth series occurs is usually level. The internal drainage is moderately good due to the coarse texture of the materials. Normally there are no stones and boulders present on these soils, but in some areas boulders are numerous and a stony phase has been separated from the stonefree soils.

The series contains only one type, Tecumseth sandy loam (12,200 acres) and one phase, Tecumseth sandy loam—stony phase (900 acres).

The following is a description of a cultivated profile:

A_1 —0-7 inches very dark grey brown (10 YR 3/2) sandy loam; medium crumb structure; very friable consistency; pH—7.0.

A_2 —7-12 inches pale brown (10 YR 6/3) sand; mottled; weak platy structure; very friable consistency; pH—7.0.

B_2 —12-17 inches strong brown (7.5 YR 5/6) sandy loam; weak subangular blocky structure; very friable consistency; mottled; pH—6.8.

C —Pale brown (10 YR 6/3) sand; calcareous; pH—7.4.

Agricultural Use

Soils of the Tecumseth series are low in inherent fertility and medium in organic matter content. By using adequate amounts of fertilizer fairly good crops can be produced. The Tecumseth soils produce only fair pasture and hay crops. Market garden crops are grown successfully with proper fertilization.

Granby Series (9,900 acres)

The Granby series is the poorly drained member of the Brighton catena, and occurs in association with the Brighton and Tecumseth series. The profile is moderately shallow, and highly mottled. The surface horizon is usually high in organic matter content.

The topography is generally level to depressional, thus there is no surface run-off.

The following is a description of a virgin profile:

A_0 —1-0 inches decomposed leaf litter.

A_1 —0-7 inches very dark brown (10 YR 2/2) sandy loam; fine crumb structure; very friable consistency; pH—7.2.

G_1 —8-14 inches light brownish grey (10 YR 6/2) sandy loam; mottled; single grain structure; loose consistency; pH—7.0.

G_2 —14-19 inches yellowish brown (10 YR 5/6) sandy loam; mottled; medium weak subangular blocky structure; pH—7.2.

C —Pale brown (10 YR 6/3) sand, calcareous; pH—8.0.

Agricultural Use

Most of the Granby soils have not been cleared. Those areas that have been cleared are used principally for pasture land. The type of pasture found on the Granby soils is only fair because of low fertility and poor drainage. A very limited number of field crops can be grown on this series. Hay, oats, and buckwheat are grown to a small extent.

Sargent Series (1,800 acres)

The Sargent series has developed from stratified gravel and sand. The solum is only about 15 inches deep and is characteristic of the Brown Forest group. The B horizon is usually directly below the A_1 horizon, however in some cases there is a weak A_2 horizon present. The parent materials are calcareous.

The Sargent series occurs in very small areas in Brock and Thorah Townships. This series was also mapped in Bruce, Grey, and Victoria Counties.

The topography on which the Sargent series occurs is nearly level. Both the internal and external drainage is good.

An uncultivated profile has the following characteristics:

A_1 —0-3 inches very dark grey (10 YR 3/1) sandy loam; fine crumb structure; very friable consistency; pH—7.1.

B_1 —3-6 inches yellowish brown (10 YR 5/4) sandy loam; coarse granular structure; very friable consistency; pH—6.7.

B_2 —6-11 inches reddish brown (5 YR 5/3) gravelly loam; fine to medium subangular blocky structure; friable consistency; pH—7.2.

C —Yellowish brown (10 YR 5/4) calcareous gravel; pH—8.0.

Agricultural Use

The Sargent soils are used for general farm crops. The fertility level is medium. The soils have a tendency to be droughty, because of the shallowness of the profile and the coarseness of the materials. Many crops can be grown with moderate success if fertilized.

Wendigo Series (5,000 acres)

The Wendigo soils are developed from coarse outwash materials. The materials are acid in reaction. The profile is characteristic of the Podzol Great Soil Group.

The series is mapped in Mara and Rama Townships in Ontario County. It also occurs in Victoria County.

The topography on which the Wendigo series occurs is gently sloping to very gently sloping. Because of the coarse, open nature of the soil, the drainage is very good.

A cultivated profile has the following characteristics:

A_c —0-6 inches dark brown (10 YR 4/3) sandy loam; fine crumb structure; extremely friable consistency; pH—6.0

B_{21}—6-14 inches yellowish brown (10 YR 5/8) sand; weak crumb structure; very friable consistency; pH—5.6

B_{22}—14-30 inches brownish yellow (10 YR 6/6) sand; weak crumb structure; very friable consistency; pH—6.0

C —Pale brown (10 YR 6/3) sand; pH—6.0

Agricultural Use

The Wendigo soils are used chiefly for pasture, but provide only fair grazing, due to the low level of their fertility. The soils have a low water holding capacity and are therefore, droughty. Hay and spring grain are grown, but with only limited success.

Mallard Series (9,000 acres)

The Mallard series is the imperfectly drained member of the Wendigo catena. The soils are developed from coarse textured sand. The profile is mottled and somewhat dark in color.

This series occurs in Mara and Rama Townships and in Victoria County. The topography is nearly level to level.

The profile has the following characteristics:

A_c —0-10 inches brown (10 YR 5/3) sandy loam; weak crumb structure; very friable consistency; pH—5.0

"Blowouts" like this are typical in the Pontypool Soils.

B_{21}—10-17 inches yellowish brown (10 YR 5/8) sand; mottled; weak crumb structure; very friable consistency; pH—5.6

B_{22}—17-31 inches brownish yellow (10 YR 6/6) sand; mottled; weak crumb structure; very friable consistency; pH—5.2.

C —Pale brown (10 YR 6/3) sand; pH—5.0

Agricultural Use

The productivity of the Mallard soils is low. Low fertility, acidity, and imperfect drainage are all factors that affect crop production. Much of the area is left in forest. The cleared land is used mainly for pasture, and has a low carrying capacity.

Kenabeek Series (6,300 acres)

The Kenabeek series is the poorly drained member of the Wendigo catena. The soils are developed from coarse textured sandy outwash materials, that are acid in reaction. The profile is only about 20 inches deep.

The Kenabeek soils occur in Mara and Rama Townships.

The topography on which the Kenabeek soils occur is level to depressional.

A cultivated profile has the following characteristics.

A_c —0-6 inches dark greyish brown (10 YR 4/2) sandy loam; crumb structure; very friable consistency; pH—5.0

G_1 —6-9 inches light brownish grey (10 YR 6/2) sand; mottled; single grain structure; loose consistency; pH—5.4

G_2 —9-18 inches light brownish grey (10 YR 6/2) sand; mottled; single grain structure; loose consistency; pH—5.4

C —Pale brown (10 YR 6/3) sand; pH—5.4

Agricultural Use

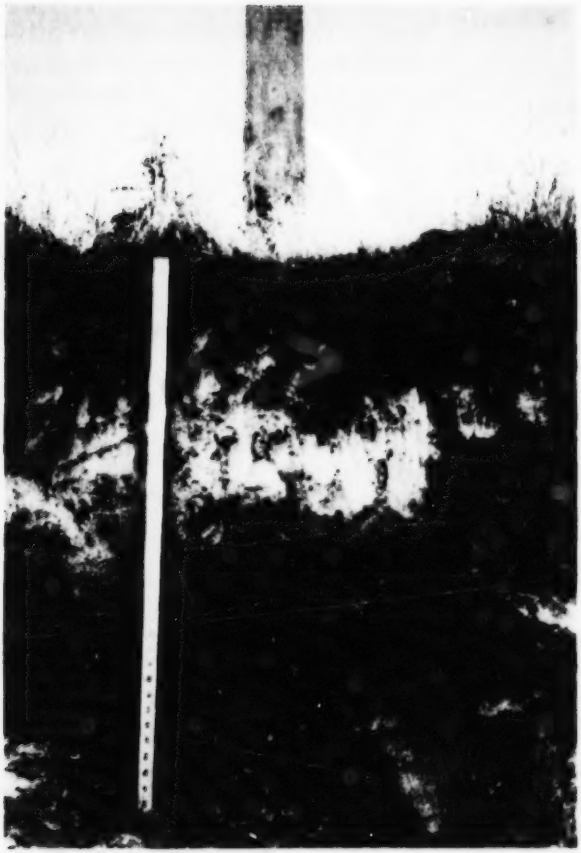
These are essentially non-agricultural soils, because of poor drainage and low fertility. Some areas are used for pasture land, but the pasture is very poor.

Pontypool Series (53,500 acres)

The Pontypool series is developed from irregularly stratified calcareous sands and gravels. Isolated pockets of till are found in areas too small to be delineated on the map.

The Pontypool series is mapped in a belt extending across the County south of Lake Scugog and Uxbridge. These soils are also mapped in Peel, York, Durham, and Northumberland Counties.

The topography is generally complex steeply sloping to very steeply sloping. As a result of the steep topography and the coarseness of the materials, the soils are mainly well drained, however, small areas of imperfectly and poorly drained soils do occur but have not been delineated on the map.



Profile of Pontypool sand showing grey A_2 horizon.

The two types mapped in this series are:

Pontypool sand (10,900 acres)
Pontypool sandy loam (42,600 acres)

A cultivated profile of the Pontypool sandy loam has the following characteristics:

A_c —0-6 inches very dark grey (10 YR 5/1) sandy loam; fine crumb structure; extremely friable consistency; pH—6.5.

A_{21}—6-15 inches yellowish brown (10 YR 5/4) sand; single grain structure; loose consistency; pH—6.2.

A_{22}—15-25 inches pale brown (10 YR 6/3) sand; single grain structure; loose consistency; pH—6.3.

B_2 —25-27 inches yellowish brown (10 YR 5/4) sandy loam;

weak subangular blocky structure; very friable consistency; pH—7.0.

C —Light grey (10 YR 7/2) sand; calcareous; pH—7.4.

The profiles vary greatly in depth. In some cases the solum is 40 to 50 inches deep. The profile also varies in reaction and texture. Small areas within the Pontypool series have suffered severe wind erosion and are now present as "blow-out" areas.

Agricultural Use

Agriculture on the Pontypool soils is limited because of the complex topography and the susceptibility of these soils to wind and water erosion. Once erosion gets a start on these soils it is very difficult to get a vegetative cover re-established. The soils are used to a limited extent for pasture, hay and grain. On the smoother areas potatoes are grown quite successfully. The soils are low in natural fertility and low in organic matter. They also have a tendency to be very droughty.

Large areas of these soils have been planted to pine and spruce.

F. SOILS DEVELOPED FROM OUTWASH MATERIALS UNDERLAIN BY LOAM TILL

In the central part of Ontario County, chiefly in Scott Township, the soil materials are composed of outwash sands deposited over calcareous loam till materials. The depth of sand varies considerably, and in some places the till appears at the surface.

The soils developed from these materials belong to the Grey-Brown Podzolic group. The Dundonald series, the well drained soil, is the only series mapped.

Dundonald Series (23,300 acres)

The Dundonald soils have a profile developed in sand and underlain by medium textured calcareous till. The till is the same as that from which the Bondhead soils are developed. The solum is generally about 27 inches deep and the B horizon often occurs at the junction between the sand and the till.

The Dundonald series occurs in Scott, and Reach Townships in Ontario County. This series also occurs in York, Victoria, and Durham Counties.

The topography ranges from smooth very gently sloping to complex moderately sloping. The drainage is good both internally and externally. Occasionally boulders occur on the surface.

The profile has the following characteristics.

A_c —0-7 inches very dark grey-brown (10 YR 3/2) sandy loam; fine crumb structure; very friable consistency; stonefree; pH—7.1.

A_{21}—7-18 inches dark yellowish brown (10 YR 4/4) sand; very weak crumb structure; extremely friable; pH—7.0.

A_{22}—18-24 inches yellowish brown (10 YR 5/4) sand; weak platy structure; extremely friable consistency; pH—7.2.

B_2 —24-27 inches dark brown (10 YR 4/3) loam; medium subangular blocky structure; firm consistency; pH—7.2.

The Schomberg clay loam profile possesses good soil aggregation.

D —Pale brown (10 YR 6/3) loam till; calcareous; pH —7.8.

Agricultural Use

The Dundonald soils are used for general farm crops. Dairying is the chief enterprise, hence hay, corn and small grains are frequently grown. The soil is only medium in fertility and has a tendency to be droughty. If the soil is left bare, wind erosion can be very serious. The soil is easily cultivated and may be worked early in the season.

G. SOILS DEVELOPED FROM CALCAREOUS CLAY OVER CLAY TILL

Lacustrine deposits underlain by a clay till at depths varying up to 3 feet are found in Pickering and Uxbridge Townships.

The soils developed from these materials are classified as Grey-Brown Podzolic.

Peel, the imperfectly drained member of the Cashel catena, was the only series mapped.

Peel Series (1,600 acres)

The Peel series is developed from lacustrine material underlain at 3 feet or less by a clay till. The solum is on the average 20 inches deep, and may be developed in the lacustrine materials alone or in the lacustrine materials and the underlying till.

The topography is very gently sloping and the drainage is imperfect.

A cultivated profile has the following characteristics.

A_c —0-6 inches very dark grey (10 YR 3/1) clay loam; large crumb structure; friable consistency; stonefree; pH—6.8

A_2 —6-11 inches yellowish brown (10 YR 5/4) clay loam; mottled; medium subangular blocky structure; pH—6.7

B_2 —11-19 inches dark greyish brown (10 YR 4/2) clay; mottled; coarse blocky structure; plastic consistency; pH—7.2

D —Pale Brown (10 YR 6/3) clay till; calcareous; pH—8.0

Agricultural Use

Peel clay loam is one of the best agricultural soils in the County. The fertility is high and with proper use and management high yields of grain, corn and hay can be obtained. Canning crops are successfully grown on this soil type. Inadequate drainage is one of the chief drawbacks of this soil. Erosion is not a serious problem.

II. SOILS DEVELOPED FROM LACUSTRINE SEDIMENTS

Lacustrine deposits occur in several areas in Ontario County. These areas are, for the most part, those adjoining the various lakes in the County. The soil materials vary

Excellent crops are obtained on the Schomberg soils.

in the amount of free carbonates present. The materials in the south and central part of the County are high in carbonates, while those in the north are low in carbonates. The soil material varies in texture from a clay to a loam. The soils are generally stonefree, with a few boulders scattered on the surface.

The soils developed from these materials belong to the Grey-Brown Podzolic Great Soil Group and the Dark Grey Gleisolic Great Soil Group.

Schomberg Series (15,300 acres)

The Schomberg soils have developed from stonefree clay. The parent material is very calcareous and quite often the whole profile is calcareous. The surface texture varies from a silt loam to a clay loam.

The Schomberg series is mapped in practically every Township in the County but most of it occurs along the Lake Ontario shore. This series also occurs in York and Durham Counties.

The topography ranges from smooth gently sloping to moderately sloping. The external drainage is good and the internal drainage is fair. Erosion is quite often severe on these soils.

The following types are included in the Schomberg series:

Schomberg clay loam (15,000 acres)
Schomberg silt loam (300 acres)

Following is a description of a Schomberg clay loam profile.

A_c —0-9 inches very dark grey (10 YR 3 1) clay loam; granular structure; friable consistency; pH—7.2.

A_2 —9-15 inches light brownish grey (10 YR 6 2) clay loam; fine to medium subangular blocky structure; friable consistency; pH—7.0.

B_2 —15-23 inches yellowish brown (10 YR 5 4) clay; large blocky structure; hard consistency; calcareous; pH—7.2.

C —Light brownish grey (10 YR 6 2) clay; stonefree; calcareous; pH—8.0.

Agricultural Use

The Schomberg soils are very fertile. They are suitable for growing a wide range of crops. Crops grown in support of the dairy industry occupy the major area of these soils. However, canning crops are grown extensively and apple orchards are numerous. The moderating influence of Lake Ontario has a favorable influence on the production of tree fruits. The organic matter level is comparatively high. Erosion controls must be practiced to prevent further erosion on these soils.

Smithfield Series (15,600 acres)

The Smithfield series is the imperfectly drained member of the Schomberg catena. The soils have developed from stonefree, calcareous clay. The surface texture is generally a clay loam. The solum is about 20 inches deep with mottling present in all horizons.

The Smithfield series occurs in a number of townships in Ontario County and in York, Victoria and Durham Counties as well.

The topography is very gently sloping to level.

A cultivated profile has the following characteristics.

A_c —0-7 inches very dark grey (10 YR 3/1) clay loam; coarse granular structure; friable consistency; pH—7.2.

A_2 —7-13 inches grey-brown (10 YR 5/2) clay loam; medium subangular blocky structure; firm consistency; mottled; pH—7.0.

B_2 —13-21 inches dark brown (10 YR 4/3) clay; large blocky structure; plastic consistency; mottled; calcareous; pH—7.3.

C —Light brownish grey clay; calcareous; pH—8.0.

Agricultural Use

The Smithfield soils are very high in fertility and the productivity is limited only by the drainage. Certain crops, such as alfalfa and fall wheat, will not tolerate imperfect drainage conditions, hence artificial drainage would prove to be a real benefit in producing better crops and a wider range of crops. Erosion is not considered to be a problem on these soils.

Level topography. Smithfield soils.

Simcoe Series (7,400 acres)

The Simcoe series is the poorly drained member of the Schomberg catena. The soils are developed from stonefree, calcareous lacustrine materials. The profile is mottled and drab, and the organic matter content is high.

The Simcoe soils occurs in several Townships in Ontario County. These soils also occur in York, Victoria, and Durham Counties.

The topography is level to depressional. Both the external and internal drainage is poor.

Simcoe clay loam is the only type mapped.

The following is a description of a cultivated profile.

A_c —0-7 inches very dark brown (10 YR 2/2) clay loam; medium granular structure; friable consistency; slightly calcareous; pH—7.2.

G_1 —7-18 inches grey (10 YR 5/1) clay; mottled; medium subangular blocky structure; plastic consistency; calcareous; pH—7.3.

G_2 —18-24 inches yellowish brown (10 YR 5/4) clay; mottled; medium to large blocky structure; plastic consistency; calcareous; pH—7.3.

C —Light brownish grey (10 YR 6/2) clay; sometimes varved; calcareous; pH—8.0.

Agricultural Use

The Simcoe soils are very fertile but have a limited productivity because of poor drainage. The variety of crops that can be grown successfully is also limited by the poor drainage but pasture fields are fairly good. Hay and oats are the other main crops now grown.

Lovering Series (16,300 acres)

The Lovering series is the imperfectly drained member of the Medonte catena. This series is developed from slightly calcareous lacustrine deposits. The solum is shallow and somewhat mottled. The solum is generally very acid in reaction, while the parent material is slightly alkaline.

The Lovering soils occur in Mara and Rama Townships in Ontario County. They also occur in Simcoe and Victoria Counties.

The topography on which the Lovering series occurs ranges from level to gently sloping. The internal and external drainages are both imperfect. The soil is essentially stonefree.

A cultivated profile has the following characteristics:

A_c —0-6 inches brown (10 YR 5/3) clay loam; coarse crumb structure; very friable consistency; pH—5.0.

A_2 —6-11 inches light grey (10 YR 7/1) clay loam; mottled; platy structure; friable consistency; pH—4.8.

B —11-18 inches yellowish brown (10 YR 5/4) clay, mot-

tled; medium to large subangular blocky structure; pH—6.0.

C —Brownish yellow (10 YR 6/6) clay; plastic consistency; pH—6.2.

There is some range in reaction within the soil series. The surface reaction ranges from approximately pH—5.0 to pH—6.0, and the reaction of the parent material ranges from pH 6.0 to pH 6.8.

Agricultural Use

Lovering soils are used for hay, spring grain, and pasture. Imperfect drainage and acidity are the chief limiting factors in crop production. Since the Lovering soils occur in association with the well drained till soils of the Vasey series, they can be utilized to advantage for those crops that tolerate imperfect drainage.

Atherley Series (3,500 acres)

The Atherley series is the poorly drained member of the Medonte catena. These soils are developed from slightly calcareous lacustrine materials that are sometimes varved. The profile is mottled and gleyed.

The Atherley series occurs in Mara and Rama Townships.

A cultivated profile has the following characteristics.

A_c —0-9 inches very dark grey (10 YR 3/1) clay; medium granular structure; friable consistency; pH—6.0.

G_1 —9-18 inches grey (10 YR 5/1) clay; mottled; coarse subangular blocky structure; plastic consistency; pH—5.8.

G_2 —18-24 inches light brownish grey (10 YR 6/2) clay; mottled; coarse blocky structure; plastic consistency; pH—6.2.

C —Grey (10 YR 6/1) clay; low lime content; pH—6.6.

Agricultural Use

There are two main limitations to crop production on the Atherley series. First, the drainage is poor and many crops can not be grown unless the drainage is improved. Second, the soil is acid in reaction and requires lime in order to grow many crops successfully. At the present time these soils are chiefly used for pasture. Some spring grain and hay are grown, but the yields are poor.

Trent Series (1,400 acres)

Lacustrine deposits of loam or fine sandy loam texture occur in small areas. The materials are moderately calcareous, and are sometimes stratified with layers of silt and clay. The solum is usually about 27 inches deep and slightly mottled. The Trent series is the imperfectly drained member of the Percy catena.

The topography is very gently sloping to level.

A cultivated soil has the following profile characteristics.

A_c —0-6 inches very dark grey (10 YR 3/1) fine sandy loam;

fine crumb structure; very friable consistency; pH—6.8.

A_{21}—6-16 inches brownish yellow (10 YR 6/6) sandy loam; weak platy structure; very friable consistency; pH—6.6.

A_{22}—16-22 inches pale brown (10 YR 6/3) sandy loam; mottled; weak platy structure; very friable consistency; pH—6.8.

B_2 —22-27 inches yellowish brown (10 YR 5/6) loam; mottled; medium subangular blocky structure; pH—7.0.

C —Very pale brown (10 YR 7/3) loam; stonefree; calcareous; pH—7.6.

Agricultural Use

The Trent soils are very fertile and are capable of producing good crops. Imperfect drainage is the main limitation in these soils. Hay, grain and ensilage corn are the chief crops grown and high yields are obtained.

I. SHALLOW SOILS OVER LIMESTONE BEDROCK

Farmington Series (12,700 acres)

The Farmington series have developed from a thin mantle of till, varying from a few inches to about a foot in depth, lying over limestone bedrock. In some areas the till is deeper than one foot, while in other areas there is no covering over the rock. The soil belongs to the Brown Forest Great Soil Group.

These soils occur in Thorah, Mara and Rama Townships. The topography is generally level to very gently sloping. The drainage varies considerably depending on the depth of till and on the topography.

Farmington soils being used for grazing.

A virgin profile has the following characteristics.

A_1 —0-4 inches, very dark brown (10 YR 2/2) loam; medium crumb structure; friable consistency; calcareous; stony; pH—7.2.

B_2 —4-8 inches dark brown (10 YR 4/3) loam; medium subangular blocky structure; pH—7.4.

C —8-10 inches very pale brown (10 YR 7/3) till; pH—8.0.

D —Limestone rock.

Agricultural Use

Farmington soils are used chiefly as grazing land for beef cattle. Although growth is not luxuriant, beef cattle thrive exceptionally well on these limestone plains. The soils have a tendency to be droughty during the late summer. Much of the area has only been partially cleared.

Rock Land (16,300 acres)

A large portion of Rama Township consists of igneous rock outcrop, on which there is little or no soil. In other places, pockets of non-calcareous sand of the Wendigo series, clay of the Lovering series, and muck occur. These soils make up a small percentage of the total area.

The topography is very rough over the whole area, with the exception of the small sand and clay plains.

The vegetation consists of white birch, poplar, rock elm, and pine as well as many shrubs.

Agricultural Use

Very little agriculture is practised in this area. Practically the only crops grown are hay and oats. The area is more important for its forest products and recreational facilities than for agriculture.

J. SOILS DEVELOPED ON FLOOD LANDS ALONG STREAM COURSES

Bottom Land (24,900 acres)

Soils occurring along stream courses, which are subject to periodic flooding, are classified as bottom land. The alluvial materials that are deposited vary considerably in texture.

Agricultural Use

The soil is used chiefly for permanent pasture. Where the drainage is fairly good, grain and hay crops are sometimes grown. Often these alluvial soils are very fertile and hence supply good pasture.

K. SOILS DEVELOPED FROM ORGANIC DEPOSITS

Fairly large areas of organic soils are found along the stream courses, as well as in other parts of the County. The organic soils are divided into two classes according to the degree of decomposition of the organic materials of which they are composed. Peat soils are those in which the organic matter is only partially decomposed. Muck

Subsistence farming on small pockets of soil found within the Rock Land.

soils are those in which the organic materials are well decomposed and may contain some inorganic materials mixed with them.

Muck (55,500 acres)

Muck soils are very variable in composition, depending on the vegetation from which they were formed. They vary also in reaction, but are generally neutral or slightly alkaline. The following description of a muck soil indicates the arrangement of layers.

(1) 0-9 inches very dark greyish brown (10 YR 3/2) well decomposed organic material derived from sedges, swamp forest, and grasses; pH—7.2.

(2) 9-15 inches more woody materials and less well decomposed; pH—6.8.

(3) 15-24 inches very dark brown (10 YR 2/2) well decomposed sticky material.

(4) Clay, till, sand or bedrock.

The topography is usually depressional to level. The drainage is very poor, the water table being high most of the year.

The vegetation consists of swamp elm, white cedar, and willow sedges.

Agricultural Use

There has been little or no cultivation of muck soils in Ontario County. They are used almost exclusively for pasture land and for forestry.

Peat (200 acres)

Only one area of peat was mapped in Ontario County. This area is in Brock Township. The peat has developed from mosses, reeds, scrub spruce, and tamaracks. The material is woody in nature. The reaction is very acid and the drainage is very poor.

Agricultural Use

The peat bog in Brock Township acts as a reservoir for water and supplies food and shelter for wild life. The tree cover is of little value commercially. Some huckleberries grow in this area.

L. MISCELLANEOUS SOILS

Marsh (5,400 acres)

Small areas of marsh are mapped along the several lakes that border Ontario County. The soils are generally permanently flooded and support a vegetation cover of sedges, cattails and rushes. These areas are used for hunting and trapping.

PART IV

AGRICULTURE AND LAND USE

Early Settlement and Agricultural Development

Ontario County was first visited by white men in 1615; however, it was not until 1800 to 1830 that the County was settled. In 1852 the Governor General's proclamation formed a Provisional County of Ontario, and Whitby was named as County town.

The land was heavily timbered, and the first concern of the settlers was to cut timber to construct buildings and clear enough land to start cultivation. The early settlers found good stands of beech, maple, birch, pine, cedar, elm and ash.

According to the report of the Agricultural Commission of 1881, there were at that time many small industries in Ontario County. These included seventeen saw and shingle mills, eleven grist mills, four cheese factories, an agricultural foundry, a woollen factory, tanneries, three planing mills, three turning shops, seven carriage factories, two cording mills, and two tile yards. Oshawa alone had three agricultural and other machinery foundries, and one of the largest furniture factories in Canada.

Ontario County was formerly known as the best grain growing County in the Province. The price of land ranged from five dollars an acre to one hundred dollars depending upon the location and land class. Considerable tile drainage has been reported in most Townships, especially in Whitby and Pickering Townships. Durham and Shorthorns were the two popular breeds of cattle.

Present Agriculture

Dairying is the most important agricultural enterprise in Ontario County. The dairy industry provides fluid milk for the Toronto market as well as markets within the County. To support this dairy industry, large acreages of hay, grain, corn, and pasture are grown. Hog raising is allied with the dairy industry.

In the northern part of the County, beef cattle raising is of prime importance. The distance from markets and the large areas of ranch land favors beef production rather than milk production.

The poultry industry is important in many parts of the County, more especially around Port Perry and Myrtle.

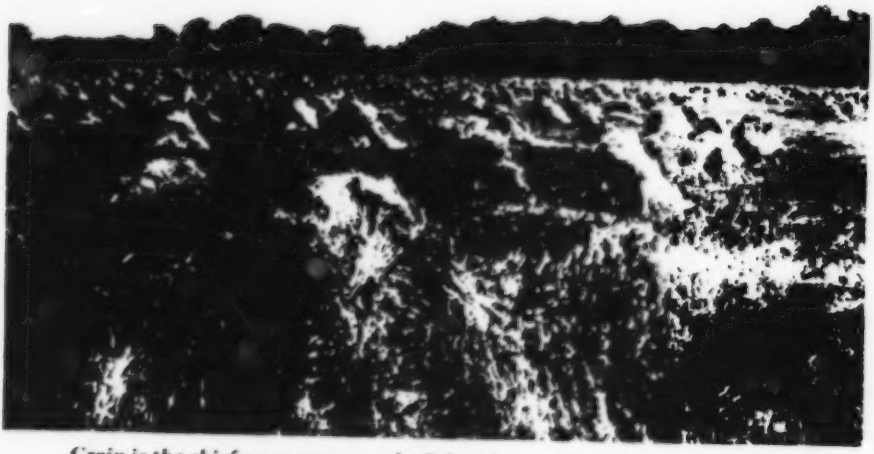
Apples and small fruits are grown along the Lake Ontario Shore.

The present status of land use in Ontario County is indicated by the following table.

TABLE IV

PRESENT LAND USE (1951 CENSUS)

	Acres	Per Cent of Total
Total Land Area	545,920	100
Area occupied land	441,391	80.8
Area improved land	290,967	53.2
Area unimproved land	150,424	27.6



Grain is the chief crop grown on the Schomberg soils in Thorah Township.

The disposition of the improved land is as follows:

TABLE V

PRESENT USE OF IMPROVED LAND (1951 CENSUS)

	Acres
Area of Improved Land	290,967
Field Crops	190,762
Pasture	82,506
Fallow	7,577
Others	10,122

Field crops occupy about 66 per cent of the improved land in the County. This large acreage of field crops is used to maintain the large number of livestock kept.

TABLE VI

ACREAGE OF PRINCIPAL CROPS
(1952 STATISTICS)

	ACREAGE
Pasture	78,800
Hay and Clover	72,200
Mixed Grain	39,800
Oats	34,000
Fall Wheat	20,500
Fodder Corn	8,100
Barley	3,300
Rye	2,500
Potatoes	1,900
Buckwheat	1,100
Field Roots	1,050
Spring Wheat	1,000
Husking Corn	750
Flax	200
Dry Peas	100
Soy Beans	90

TABLE VII

VALUE OF FARM PRODUCTS IN ONTARIO COUNTY
(1952 STATISTICS)

	VALUE $
Cattle	12,766,300
Field Crops	8,163,500
Swine	1,610,600
Poultry	563,856
Horses	522,700
Sheep	476,300

Dairying is an important enterprise in Ontario County.

Adaptability Rating for Ontario County Soils.

The soils of Ontario County differ greatly in their ability to produce the various crops commonly grown in the area. The ability of a soil to produce crops depends upon a number of factors, the most important of these being drainage, fertility, and climate. Other factors that influence the suitability of soils to produce crops are organic matter content, texture, structure, need for erosion control, stoniness, and depth to bedrock.

The soils of Ontario County are evaluated according to their ability to produce the crops commonly grown in the County. The ratings made in this report are only estimates based to a large extent on the characteristics of the soil. With the introduction of new varieties, improved systems of soil management, and other factors, the ratings will undoubtedly be adjusted or changed. The ratings for the soils of Ontario County are based further on data and opinions furnished by agronomic and soil workers familiar with the area and on consultations with local farmers.

TABLE VIII

CROP ADAPTABILITY RATINGS FOR GOOD CROP LAND*

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Schomberg silt loam	G	G	G	G	G	G	G–F	G–F	F–P	G
Schomberg clay loam	G	G	G	G	G	G	G–F	G–F	F–P	G–F
Peel clay loam	G–F	G	G	G–F	F	G	G	G–F	F–P	F
Darlington loam	G	G	G	G	G	G	G–F	G–F	F	G–F
Woburn loam	G	G	G	G	G	G	G–F	G–F	F	G–F
Bondhead loam	G	G	G	G	G	G	G–F	G–F	F	G–F
Trent fine sandy loam	G–F	G–F	G–F	G–F	G–F	G	G–F	G–F	G–F	G–F
Smithfield clay loam	F	G–F	G	G–F	F	G	G	G–F	F–P	F
Milliken loam	G–F	G	G	G	G–F	G	G	G	F	F
Otonabee loam	G–F	G–F	G–F	G	G	G	F	F	F	F–P

TABLE IX

CROP ADAPTABILITY RATING FOR GOOD TO FAIR CROP LAND

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Vasey loam	F	G–F	G	G–F	G–F	G	G–F	F–P	F	P
Lovering clay loam	F	G–F	G	G–F	F–P	G	G–F	F–P	F–P	F–P
Whitby loam	F	F	G–F	G–F	F	G–F	F	F	F–P	F–P
Emily loam	F	F	G–F	G–F	F	G–F	F	F	P	F–P
Guerin loam	F	F	G–F	G–F	F	G–F	F	F	F–P	F–P
Dundonald sandy loam	G–F	G–F	G–F	G–F	F	G–F	F	F	G–F	G–F
Bondhead sandy loam	G–F	G–F	G–F	G–F	F	G–F	F	F	F	F
Woburn sandy loam	G–F	G–F	G–F	G–F	F	G–F	F	F	F	F
Otonabee sandy loam	F	F	F	G–F	G–F	G–F	F	F	F–P	F–P
Vasey sandy loam	F	F	F	G–F	F	G–F	F	F	F–P	F–P

* The crop adaptability rating for each soil is as follows:
G—Good; G–F—Good to Fair; F—Fair; F–P—Fair to Poor; P—Poor.

TABLE X

CROP ADAPTABILITY RATINGS FOR FAIR CROP LAND

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Brighton sandy loam	F–P	F–P	F	F	F–P	F	F	F	G–F	F
Brighton gravelly sandy loam	F–P	F–P	F	F	F	F	F	F	F	F
Sargent sandy loam	F–P	F–P	F	F	F	F	F	F	F	P
Wendigo sandy loam	F–P	F–P	F	F	F–P	F	F	F–P	G–F	P
Simcoe clay loam	P	F–P	F	F	P	G–F	F	F	P	P
Atherley clay loam	P	F–P	F	F	P	G–F	F	F	P	P
Tecumseth sandy loam	P	F–P	F	F	F–P	F	F–P	F	F	F–P
Emily loam—shallow phase	P	P	F	F	P	F	F–P	F	P	P
Milliken loam—stony phase	P	P	F	F	P	F	F–P	F	F	P

TABLE XI

CROP ADAPTABILITY RATINGS FOR FAIR TO POOR CROP LAND

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Mallard sandy loam	P	F–P	F	F–P	P	F–P	F–P	F	F	P
Pontypool sandy loam	F–P	F–P	F	F–P	P	P	F–P	F–P	F	P
Lyons loam	P	P	F	F	P	F	P	P	P	P
Brighton sandy loam—stony phase	P	P	F–P	F–P	F–P	F	P	P	P	P
Tecumseth sandy loam—stony phase	P	P	F–P	F–P	P	F	P	P	P	P

* The crop adaptability rating for each soil type is as follows:
G—Good; G–F—Good to Fair; F—Fair; F–P—Fair to Poor; P—Poor.

TABLE XII

CROP ADAPTABILITY RATINGS FOR POOR CROP LAND

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Granby sandy loam	P	P	F	F–P	P	F–P	F–P	F	F	P
Kenabeek sandy loam	P	P	F	P	P	F	P	P	P	P
Pontypool sand	P	P	P	P	P	P	P	P	F	P
Farmington loam	P	P	F–P	F–P	P	G–F	P	—	—	F

TABLE XIII

CROP ADAPTABILITY RATINGS FOR SUBMARGINAL CROP LAND

Soil Type	Winter Wheat	Barley	Oats	Hay & Clover	Alfalfa	Pasture	Ensilage Corn	Canning Crops	Potatoes	Tree Fruits
Bottom land	—	—	—	F	—	G–F	P	—	—	—
Muck	—	—	—	F	—	G–F	—	—	—	—
Peat	—	—	—	—	—	P	—	—	—	—
Rock land	—	—	—	—	—	P	—	—	—	—
Marsh	—	—	—	—	—	—	—	—	—	—

* The crop adaptability rating for each soil type is as follows:
G—Good; G–F—Good to Fair; F—Fair; F–P—Fair to Poor; P—Poor.

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